

## THE CORONAVIRUS PANDEMIC

# Heart Problems Raise Death Risk

BY BETSY MCKAY

People with cardiovascular disease face more life-threatening complications and a substantially higher risk of death from the new coronavirus, according to data and reports from doctors in several countries, and even those with simple high blood pressure are being urged to take extra care against infection.

Among the complications are conditions that put these patients' already strained hearts under additional stress. While Covid-19 is a respiratory disease, doctors increasingly report that some patients develop cardiovascular complications such as heart-rhythm disorders, blood clots and inflammation causing chest pain that mimics a heart attack.

These complications can be deadly. "We've certainly seen cardiac arrests," said Matthew Tomey, director of the cardiac intensive-care unit at Mount Sinai Morningside Hospital in New York City.

"It's very clear that there is a cardiovascular involvement in Covid-19 disease," said Nir Uriel, director of advanced heart failure and cardiac transplantation at New York-Presbyterian Hospital.

These complications also strike Covid-19 patients who were otherwise healthy, but people with heart disease have more trouble because their cardiovascular systems are already impaired, Dr. Uriel said.

Cardiovascular disease is the most common and deadliest so far of several underlying conditions that make some people more vulnerable to the ravages of Covid-19, a disease that causes barely an ache or pain for some who are infected but sends others to ICUs for weeks. People with diabetes, chronic lung disease and cancer are also at risk, according to several studies.

Cardiologists say they aren't surprised that Covid-19 takes a heavier toll on heart-disease patients. So have SARS and MERS, two other coronaviruses, as well as severe influenza. Still, they are taken aback by the huge numbers of such cases. "I have never seen such a volume of patients come in all at once and all be so critically ill," said Sahil Parikh, an interventional cardiologist at Columbia University Irving Medical Center in New York City.

Scientists say they don't fully understand why cardiovascular disease puts people at such increased risk. The American Heart Association is funding research to learn more.

Many of these patients are older, more prone to hypertension, and already more vulner-

**'...There is a cardiovascular involvement in Covid-19 disease.'**

able because immune systems naturally weaken with advanced age. But high blood pressure, coronary-artery disease and other heart conditions put many younger people at increased risk, too.

About 46% of American adults have high blood pressure, according to guidelines by the American College of Cardiology and the AHA. African-Americans, who have the highest mortality from cardiovascular disease of all racial and ethnic groups in the U.S., are being infected and dying from the new virus at disproportionately high rates.

Because so little is known, even people who have their high blood pressure under

control and don't have any other risk factors are advised to take extra precautions against Covid-19 infection.

"My gut feeling is hypertension as a single entity—not associated with any other cardiovascular disease or diabetes or obesity or smoking or vaping—probably is not much of an increased risk factor, but we don't know that," said Mariell Jessup, the AHA's chief science and medical officer. "We just have to urge great caution for everyone."

Cardiologists also worry that patients who are stuck at home or recently unemployed are missing out on medications and care. They are particularly concerned that patients may stop taking blood-pressure medications following reports that certain types—angiotensin-converting enzyme or ACE-inhibitors and angiotensin receptor blockers—could increase the risk of Covid-19 infection. Several medical societies have said patients should remain on the drugs because evidence of increased infection risk is weak.

Doctors have reported a surprisingly high number of Covid-19 cases in which patients developed symptoms of a heart attack. Instead, they were found to have myocarditis, an inflammation of the heart muscle that can cause a weakening of its function and increase its susceptibility to rhythm disorders, said Dr. Parikh, the Columbia cardiologist.

"Patients will come to the hospital presenting for all the world like a heart attack," said Dr. Parikh. Normally, such patients are whisked to a cardiac-catheterization lab to identify and treat blockages. Now, cardiologists take patients who could have Covid-19 to the emergency department first for an assessment, he said.

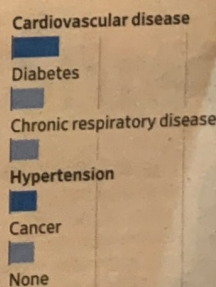


Health workers bring a patient into an ambulance in Brooklyn, N.Y.

Covid-19 patients with cardiovascular issues fare worse than others...

**Mainland China's death rate by underlying condition\***

Among 44,672 cases



**Clinical outcome of patients in Wuhan, China**

■ Without cardiac injury  
■ With cardiac injury

Among 416 cases

Remained in hospital

Discharged

Died

**ICU patients with underlying conditions in Lombardy, Italy**

Among 1,591 cases

Hypertension

Cardiovascular disease

High cholesterol

Diabetes

Cancer

Chronic lung disease

...compounding the threat in areas where such issues are common

**U.S. patients' underlying conditions\***

Among 178 cases

Hypertension

Obesity

Chronic metabolic disease

Chronic lung disease

Diabetes

Cardiovascular disease

Note: \*As of March 30, 2020; †As of February 11, 2020.

Sources: U.S. Department of Health & Human Services; JAMA; Chinese Center for Disease Control and Prevention

EXHIBIT 1